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Agriculture development, food security and nutrition

Agriculture development, food security and nutrition

Report of the Secretary-General

Summary

The world is not on track to eradicate hunger and malnutrition by 2030. Scarce and unsustainably managed natural resources, combined with insecure and uneven tenure rights for smallholders, are severely affecting vulnerable populations in rural areas. Climate change, drought, political instability and conflict are threats to food security in many places and prevent progress in implementing the Sustainable Development Goals. Countries in protracted crises are at risk of being left behind. A more comprehensive and coordinated response by the international community is needed to link short-term responses to humanitarian crises with longer-term development efforts that address the underlying causes of food insecurity and malnutrition, build resilient and sustainable livelihoods and support sustainable food systems through inclusive policy processes and effective partnerships.

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I. Introduction

1. In its resolution 71/245 on agriculture development, food security and nutrition, the General Assembly requested the Secretary-General to report to the Assembly at its seventy-second session on the implementation of the resolution and called upon the relevant organizations of the United Nations system, within their respective mandates and resources, to ensure that no country is left behind in the implementation of the resolution.

2. The adoption of the 2030 Agenda for Sustainable Development (see General Assembly resolution 70/1) heralded a transformation in how national Governments, institutions and stakeholders work together as they reorganize their thinking to implement the Sustainable Development Goals. An increased understanding of the interlinkages among all the Goals was evident during the review of progress towards Sustainable Development Goal 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture) at the high-level political forum on sustainable development convened in 2017, which was informed by a number of significant preparatory processes and coordinated inputs undertaken by various bodies and multiple stakeholders.

3. In providing information and updates on global efforts to achieve the internationally agreed goals on agriculture development, food security and nutrition, in alignment with the Sustainable Development Goals, the present report draws from the inputs to the high-level political forum and other sources, including contributions from the Food and Agriculture Organization of the United Nations (FAO), the World Food Programme (WFP), the International Fund for Agricultural Development (IFAD) and the secretariat of the Committee on World Food Security, with additional collaboration from the Office of the United Nations High Commissioner for Human Rights, the United Nations Capital Development Fund, the United Nations Entity for Gender Equality and the Empowerment of Women (UN-Women), the Joint United Nations Programme on HIV/AIDS, the United Nations Industrial Development Organization, the United Nations Educational, Scientific and Cultural Organization, the International Labour Organization, the International Organization for Migration, the High-level Task Force on Global Food and Nutrition Security, the World Bank, the International Telecommunication Union, the United Nations Children's Fund (UNICEF), the Office for the Coordination of Humanitarian Affairs, the World Health Organization (WHO), the regional commissions and the Department of Economic and Social Affairs of the Secretariat.

II. Overview

4. Efforts to end hunger and malnutrition must be accelerated. By the current trends, the world is not on track to eradicate hunger and malnutrition by 2030. An estimated 793 million people lack access to adequate amounts of dietary energy[1] and 156 million children are stunted.[2] Other forms of malnutrition are also rising:

[1] Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD) and World Food Programme (WFP), *Monitoring Food Security and Nutrition in Support of the 2030 Agenda for Sustainable Development: Taking stock and looking ahead* (Rome, 2016).

[2] United Nations Children's Fund (UNICEF), World Health Organization (WHO) and World Bank, "Levels and trends in child malnutrition: joint child malnutrition estimates", September 2016.

2 billion people are deficient in key vitamins and minerals, and 1.9 billion adults and 43 million children worldwide are overweight or obese.[3]

5. The number of hungry and food-insecure people in countries affected by conflict and crises has increased dramatically, from almost 80 million in 2015 to 108 million in 2016.[4] In recent months, severe food insecurity as a result of different combinations of environmental stressors, conflict, displacement and competition over scarce natural resources has affected millions of people. This constitutes a major humanitarian challenge confronting the international community that requires urgent attention.

6. The current pace and scope of implementation is unlikely to promote the transformational change needed to realize the objectives of Sustainable Development Goal 2, and its targets will not be achieved in many parts of the world. Large segments of the world's population, particularly in sub-Saharan Africa and South Asia, will remain undernourished or malnourished by 2030 and even by 2050. According to the Intergovernmental Panel on Climate Change, if current trends continue, it is estimated that an additional 1-3 billion people will be affected by water scarcity and 200-600 million people will suffer from hunger by 2080, particularly in sub-Saharan African countries. WHO reports that climate change is also expected to cause approximately 250,000 additional deaths each year from malnutrition, malaria, diarrhoea and heat stress between 2030 and 2050 and to result in 24 million additional malnourished children.[5]

7. More coordinated efforts are needed to meet the immediate needs of people affected by major food crises, which are often fuelled by conflict, high food prices and abnormal weather patterns caused by the El Niño phenomenon, through targeted emergency responses as well as medium- and longer-term assistance to support recovery and build resilience.

8. Hunger and poverty must be addressed simultaneously by raising incomes and productivity, securing smallholders' tenure rights over productive resources, especially for women and youth, creating decent employment, ensuring adequate social protection and enhancing the functioning of markets. Interventions should be increased in rural areas, where the majority of the extreme poor and chronically food insecure live.

9. Progress towards sustainable agriculture is also slow and uneven. Small-scale food producers play a critical role in catalysing rural transformation that ensures sustainable livelihoods, particularly in countries where smallholder agriculture is the main provider of food and employment. Increased investments are needed to enhance capacity for agricultural productivity. Progress on mobilizing means of implementation for Sustainable Development Goal 2 and related provisions in the Addis Ababa Action Agenda, especially on investment in sustainable and inclusive agriculture to reduce poverty and food insecurity, remains insufficient and needs to be urgently addressed.

10. Sustainable Development Goal 2 highlights the complex interlinkages among food security, nutrition, rural transformation and sustainable agriculture. The Goal links the eradication of hunger and malnutrition to a transformation in agriculture and food systems and to the empowerment of rural people, women and men alike, as critical agents of change. The creation of more sustainable food systems must be at the centre of efforts to eradicate poverty and promote prosperity. While agriculture

[3] UNICEF, WHO and World Bank, "Levels and trends in child malnutrition: joint child malnutrition estimates", 2012.

[4] Food Security Information Network, "Global report on food crises, 2017", March 2017.

[5] WHO, "Climate change and health fact sheet", July 2017.

plays a direct role in eradicating hunger and extreme poverty, it is also central to achieving targets of the Goals relating to health, water, biodiversity, sustainable cities, sustainable energy, oceans and climate change.

11. The inextricable link between Goal 2 and other Sustainable Development Goals presents numerous challenges at the national level. Many countries are following diverse pathways to achieve Goal 2, establishing national platforms for developing more integrated policies and programmes and fostering knowledge-sharing and productive partnerships. Effective use of inclusive multi-stakeholder platforms and partnerships can support holistic, well-balanced approaches to achieving Goal 2 and its related targets. Encouraging policy developments were seen at the global level in 2017 in the context of the Group of 20, the Group of Seven and the United Nations Framework Convention on Climate Change, which should be further built upon.

III. Ending hunger and ensuring access to food

12. With regard to target 2.1 of the Sustainable Development Goals, great progress in poverty and hunger reduction over the past few decades in many parts of the world notwithstanding, poverty, hunger and malnutrition still remain major obstacles to sustainable development. The number of hungry and food-insecure people in countries affected by conflict and crises increased dramatically in 2016 to 108 million people, from around 80 million in 2015. In recent months, severe food insecurity as a result of different combinations of environmental stressors, conflict, displacement and competition over scarce natural resources has affected nearly 20 million people; high risk of famine is currently observed in north-east Nigeria, Somalia, South Sudan and Yemen.[6] This constitutes a major humanitarian challenge confronting the international community and requires urgent attention.

13. The most recent projections suggest that approximately half of the global poor now live in States characterized by conflict and violence.[7] The eradication of poverty and the promotion of prosperity require a greater focus on those countries, which often face continuous or recurring cycles of disaster, crisis or conflict that pose threats not only to peoples' lives but also to their livelihoods. Yet emergency and relief assistance are often insufficient to break the cycle. Protracted crises call for specially designed and targeted assistance that addresses the immediate need to save lives and alleviate suffering, and also boosts resilience and the capacity to prepare for, absorb and prevent humanitarian disasters, crises and long-term stresses in the future. The particular impact on women and children and the importance of considering gender in responses to crises should be given greater attention, while nutritional needs, given the severity of undernutrition during protracted crises, also require a special focus.

14. A rapid and efficient response to agricultural threats and emergencies saves lives, promotes recovery and reduces the gap between dependency on food assistance and self-reliance. The combination of humanitarian assistance with development actions to protect and restore agriculture-based livelihoods can mitigate and avert the loss of lives resulting from hunger, food insecurity, malnutrition and loss of livelihoods. Building resilience within rural communities and providing support to local food systems are essential to address root causes and prevent additional crises.

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[6] FAO, "World hunger on the rise again, reversing years of progress", 3 July 2017. Available from http://www.fao.org/news/story/en/item/902489/icode/.

[7] FAO and WFP, "Monitoring food security in countries with conflict situations: A joint FAO/WFP update for the United Nations Security Council", July 2016.

15. Populations at risk of famine or facing chronic food insecurity largely depend on agriculture for their survival. As conflict, drought or other natural disasters and economic crises erode their livelihoods, their risk of hunger and need to rely on external assistance rises. In Somalia, for example, almost 90 per cent of people at high risk of famine live in rural areas.

16. The Framework for Action for Food Security and Nutrition in Protracted Crises of the Committee on World Food Security provides guidance to stakeholders on how to improve food security and nutrition in protracted crises while addressing the underlying causes, and represents a global consensus on how to improve the food security and nutrition of populations affected by or at risk of protracted crises, through bridging humanitarian and development assistance. The Framework provides a basis for increasing integrated actions in countries affected by or at risk of protracted crises and guidance on how to build resilience and prevent further crises and resulting impacts on food security and nutrition.

17. FAO, WFP and the Office for the Coordination of Humanitarian Affairs, through the Inter-Agency Standing Committee Emergency Directors Group, are supporting countries to adopt, adapt and replicate the Integrated Food Security Phase Classification to support country-level joint assessments for the humanitarian needs overview, and are participating in a pilot initiative on common donor reporting. The phase classification system provides a set of standardized tools and procedures as a common language for the analysis and classification of the severity and magnitude of food insecurity and malnutrition and informed the famine declaration in South Sudan in February 2017.

18. In Somalia, through the Food Security and Nutrition Analysis Unit, pre-famine warnings were issued in February 2017, prompting a massive international response which has so far prevented the worst-case scenario, while regular updates were provided on the progress of cropping seasons, climate and markets, as well as the evolving food security situation.

19. FAO worked closely with WFP and the European Union to coordinate the compilation of global and regional food security analyses in the "Global report on food crises 2017" through a transparent, consultative and consensus-based process to ensure that appropriate planning and needs-based allocations tackle the consequences of food security crises within an evolving humanitarian financing environment and to provide evidence for informed decision-making.

20. Developing the capacity of national Governments to manage information systems ensures the ownership and adequacy of information for national policymaking. The FAO Global Information and Early Warning System continuously monitors the food security situation in every country and alerts the world to emerging food shortages. In Yemen, FAO is supporting the strengthening of the early warning system, including by enhancing the collection, analysis and management of nutrition and food security data and translating alerts into a swift response to any emerging crisis.

21. The expansion of social protection across the world has been critical for progress towards the international targets on hunger. More than 100 countries now have some form of cash transfer programme that is focused on promoting food security and nutrition, health and education, particularly of children. However, around 70 per cent of people worldwide still lack access to some form of social security.[8] Ensuring access to social protection instruments is critical to provide a minimum income and help people living in poverty transition into jobs and income-

[8] FAO, IFAD and WFP, *The State of Food Insecurity in the World, 2015: Meeting the 2015 international hunger targets — taking stock of uneven progress* (Rome, 2015).

generation opportunities to ensure their participation as partners in development and economic growth.

22. Social protection also improves the use and ownership of productive investments at the household level, leading to increased farm production, food security, local economic growth and rural development, especially when combined with agricultural interventions. In Ethiopia, for example, every $1 transferred through social protection programmes generates up to $2.52 in income for the local economy.[9]

23. Countries are encouraged to promote multisectoral approaches to nutrition and food security by aligning social protection, nutrition and nutrition-sensitive agricultural interventions. This includes designing joint packages of interventions ("cash plus" interventions) that take advantage of the targeting used for social protection programmes, which aim to reach the poorest and most vulnerable, and link beneficiaries with nutrition services while promoting nutrition-sensitive agriculture.

24. Agricultural production and markets must improve access to diversified, nutrient-dense foods. By ensuring that agricultural objectives match food recommendations, such as national food-based dietary guidelines, it will be possible to promote food and dietary diversification and help to close nutrient gaps through agricultural interventions. Simultaneously, nutrition education among actors along the value chain can increase demand for diversified, nutrient-dense foods. Women's empowerment and nutrition education are essential to enhance the capacities of families and communities to better feed themselves. Reviews of nutrition-related outcomes of agricultural development projects consistently underline that the impact on dietary adequacy and child growth depends on whether nutrition education is included in the intervention.

IV. Ending all forms of malnutrition

25. With regard to target 2.2 of the Goals, nutrition challenges are increasingly complex as multiple forms of malnutrition, including stunting, wasting, underweight, micronutrient deficiencies, overweight and obesity, may coexist within the same country or household. One in four children under five years of age is at risk of dying from malnutrition-related diseases. Over 2 billion people lack the vitamins and minerals they need to grow, develop and lead healthy lives.[10]

26. In 2016, the global prevalence of stunting, wasting and overweight among children under the age of five was 22.9 per cent (155 million), 7.7 per cent (52 million) and 6.0 per cent (41 million), respectively. Child malnutrition is most prevalent in South Asia and sub-Saharan Africa, where more than a third of children (36 per cent and 34 per cent, respectively) were stunted in 2016. Although the prevalence rate has declined from 52 per cent and 43 per cent in 2000, South Asia and sub-Saharan Africa still hold the highest child malnutrition rates: 77 per cent of the world's stunted children live in those two regions.[11] More than half of the world's wasted children live in South Asia.[12]

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[9] FAO, *The State of Food and Agriculture: Social protection and agriculture — breaking the cycle of rural poverty* (Rome, 2015).

[10] FAO, IFAD and WFP, *The State of Food Insecurity in the World 2015*.

[11] World Bank, Health, nutrition and population data portal. Available from http://datatopics.worldbank.org/health/sdg-indicators (accessed 8 August 2017).

[12] UNICEF, WHO and World Bank, "Levels and trends in child malnutrition: joint child malnutrition estimates — key findings of the 2017 edition", 2017.

27. Globally, around 1.9 billion adults are overweight, of whom 600 million are obese. This has a high cost in terms of increased prevalence of diet-related non-communicable diseases and the associated health expenditure. It is expected that 11 per cent of children below the age of five will be obese by 2025 if the current trend does not change.

28. Improving rates of breastfeeding could prevent 820,000 child deaths each year and decrease the prevalence of overweight or obesity later in life by 26 per cent. Given that for every $1 spent on nutrition programmes, $16 in benefits are generated, interdisciplinary efforts within food systems to achieve better nutrition present great potential for middle- and low-income countries to avoid following the "well-worn, highly damaging path from undernutrition to obesity" observed in the past.[13]

29. The launch in 2016 of the United Nations Decade of Action on Nutrition (2016-2025), pursuant to General Assembly resolution 70/259, was an important step towards a more clearly defined, time-bound cohesive framework that works within existing structures and available resources to implement the broad commitments made at the Second International Conference on Nutrition, held in 2014, as well as the Sustainable Development Goals. The Decade was proposed as a result of the Second International Conference on Nutrition and its outcomes, the Rome Declaration on Nutrition and the Framework for Action, which set out a common vision for global action to eradicate hunger and end all forms of malnutrition, including undernutrition, micronutrient deficiencies, overweight and obesity.

30. The added value of the United Nations Decade of Action on Nutrition is to establish a focused period to set, track and achieve impact and outcomes and provide an accessible, transparent and global mechanism for tracking progress and ensuring mutual accountability for the commitments made. FAO and WHO co-lead its implementation, in collaboration with WFP, IFAD and UNICEF. The work programme for the Decade was developed through an inclusive and collaborative process using coordination mechanisms such as the Standing Committee on Nutrition and the Committee on World Food Security, in consultation with other international and regional organizations and platforms. National Governments are developing commitments for action in line with the Sustainable Development Goals and various regional strategic frameworks.

31. As part of the Decade, a wide range of organizations and partners are working together through Nutrition for Growth, a global movement to re-energize the political momentum and global focus on nutrition and mobilize new financial and policy commitments. Nutrition for Growth is led by a partnership among the Governments of the United Kingdom of Great Britain and Northern Ireland, Brazil and Japan and is championed by philanthropic foundations and civil society organizations, including the Nutrition for Growth stakeholders group, the International Coalition for Advocacy on Nutrition and the Scaling Up Nutrition movement. In addition to providing a platform for commitments, Nutrition for Growth enables exchanges and learning on how to address malnutrition more effectively and how to foster a culture of transparency and accountability.

32. The International Year of Pulses (see General Assembly resolution 68/231), in 2016, increased public awareness of the nutritional benefits of pulses, prompted worldwide activities that successfully disseminated knowledge of the benefits of pulses for food and nutrition security, fostered dialogue on the development of

[13] Lawrence Haddad and others, "A new global research agenda for food", *Nature*, vol. 540 (30 November 2016), pp. 30-32.

policies that promote their production, consumption and trade, and promoted sustainable agriculture and food systems.[14]

33. FAO and WHO have promoted policy dialogue among countries and development partners on nutrition and food systems through the International Symposium on Sustainable Food Systems for Healthy Diets and Improved Nutrition, held in Rome on 1 and 2 December 2016, and have developed capacities at the national, regional and global levels for monitoring the implementation of the Framework for Action adopted at the Second International Conference on Nutrition.

34. The establishment of the Pan-African Parliamentary Alliance for Food Security and Nutrition in October 2016 and the launch of the food and nutrition security knowledge-sharing and monitoring platform (developed by the New Partnership for Africa's Development and piloted in the Southern African Development Community region) are examples of partnerships that contribute to the implementation of the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods of the African Union, which includes the "commitment to ending hunger in Africa by 2025", in support of ongoing regional and country efforts.

35. In Asia, the implementation of the integrated food security framework and strategic plan of action on food security in the Association of Southeast Asian Nations (ASEAN) region (2015-2020) and the vision and strategic plan for ASEAN cooperation in food, agriculture and forestry (2016-2025), including intercountry policy dialogue on food security and nutrition to eradicate hunger and all forms of malnutrition, is being translated into national zero hunger action plans in Bangladesh, Cambodia, Fiji, the Lao People's Democratic Republic, Myanmar, Nepal, Pakistan, Thailand, Timor-Leste and Viet Nam.

36. The Community of Latin American and Caribbean States (CELAC) adopted a food and nutrition security plan in 2015 with increased attention on links between food security, nutrition, family farming and climate change. In January 2017, CELAC member States approved a gender strategy for the plan.

37. In 2016, the Latin American and Caribbean Parliamentary Front Against Hunger and the Latin American and Caribbean Parliament approved a model law on family farming that focuses on the needs of the most vulnerable and on equitable access to all natural resources and their sustainable use, while respecting and prioritizing the rights of indigenous traditional communities.

38. The forestry sector is an important contributor to food security and nutrition; over 2.4 billion people worldwide depend on forest goods and services for the direct provision of food, fuel, building materials, medicines, employment and income. In a report entitled "Sustainable forestry for food security and nutrition",[15] the High-level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security proposes actions to enhance the benefits of sustainable forestry for improved food security and nutrition.

39. The fisheries and aquaculture sector is also crucial to food and nutrition security, and its importance is growing. The FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication[16] provide concrete guidance.

[14] Materials and activities are available on the website of the International Year of Pulses (www.fao.org/pulses-2016/en/).

[15] Available from www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/HLPE_Reports/HLPE-Report-11_EN.pdf.

[16] Available from www.fao.org/3/a-i4356e.pdf.

40. In June 2017, the Latin American and Caribbean Parliament created the first model act on small-scale fishing in the world, which will serve as an example for countries to strengthen this key sector for food and nutrition security. The act is a legal frame of reference that countries can use as a basis for developing their own national policies and laws to support millions of people who depend on artisanal fishing as their main livelihood.

41. To address the unique food security and nutrition challenges faced by small island developing States, FAO led the development of the Global Action Programme on Food Security and Nutrition in Small Island Developing States with the Department of Economic and Social Affairs and the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States in 2017. The Global Action Programme also incorporates the range of priorities identified in the SIDS Accelerated Modalities of Action (SAMOA) Pathway for the conservation, management and sustainable use of oceans and seas and their resources in small island developing States.

V. Doubling the agricultural productivity and incomes of small-scale food producers

42. With regard to target 2.3 of the Goals, transformative change in agrifood systems requires equal consideration for the social, environmental and economic pillars of sustainable development, moving beyond the green revolution to increase production and productivity sustainably for the health and well-being of people without negative social and environmental externalities.

43. Small-scale food producers, including small-scale farmers, artisanal fishers and pastoralists, indigenous people and other key actors across agrifood systems play a critical role in catalysing rural transformations that ensure sustainable livelihoods and human dignity. Smallholder agriculture significantly contributes to the economic sustainability of food systems, being the largest source of investment and economic opportunities in rural areas and the largest provider of employment worldwide.[17]

44. However, many smallholder farmers and their households are themselves poor, food insecure and at risk of malnutrition and have limited access to markets and productive assets and services. They are vulnerable to shocks, and their economic choices are highly constrained.

45. Rural poverty reduction interventions must promote inclusive access to tailored productive technologies and capacity development that enhance the efficiency and productivity of smallholders and family farmers. Solutions lie in public sector investments in infrastructure, better linkages between research, extension and farmers and sound policies to stimulate the adoption of tailored technologies that improve productivity and reduce costs, all of which increase agricultural incomes and yields.

46. The productive capacity of the poorest must be enhanced through integrated approaches such as combining social protection programmes with support for agricultural production; exploring options such as public procurement, farmers markets and different ways to link local production to school meals and other public procurement systems; integrating small-scale producers and family farmers into

[17] Committee on World Food Security High-level Panel of Experts on Food Security and Nutrition, "Investing in smallholder agriculture for food security", June 2013.

value chains; and strengthening producer organizations and cooperatives. Interventions must address potential trade-offs arising from competing interests in available resources, with agricultural expansion responsible for almost 80 per cent of the net forest loss worldwide (more than 5 million hectares each year).[18]

47. Inclusive, efficient and equitable producer organizations and cooperatives are acknowledged as key implementing partners for the Sustainable Development Goals and bring essential and innovative solutions to the challenges of reducing rural poverty, generating employment opportunities and achieving food security. With the vast majority of the world's farms being less than two hectares in size, the potential of family farming can be unlocked through collective action in the form of cooperatives and producer organizations.

48. Women make crucial contributions in agriculture and rural enterprises in all developing country regions as farmers, workers and entrepreneurs. Their roles vary across regions, ranging from paid agricultural work to unpaid labour on family farms and household work. However, many women face persistent gender-specific constraints that reduce their productivity and limit their contributions to agricultural production, economic growth and the well-being of their families, communities and countries. These include limited access to productive resources, extension services and credit, less control over land and lack of secure tenure.

49. The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security, endorsed by the Committee on World Food Security, build on the potential offered by technology and innovation, such as regulated special planning for the sustainable management of land, fisheries and forests. The guidelines support the work of many multilateral organizations worldwide and have given rise to Government-to-Government initiatives through bilateral and South-South cooperation and partnerships between Governments and civil society organizations and among Governments, civil society organizations and private sector companies. Partners are coordinating global and regional initiatives to address land issues, such as the African Land Policy Initiative framework and guidelines on land policy in Africa, and, at the pan-African level, are promoting effective land policies to provide equitable and secure access to land, fisheries and forests in order to accelerate the achievement by countries of the interrelated targets of the 2030 Agenda.

50. Along with the Voluntary Guidelines, the Principles for Responsible Investment in Agriculture and Food Systems of the Committee on World Food Security, which contain recommendations on connecting smallholders to markets and sustainable fisheries and aquaculture for food security and nutrition, are important tools for national policy development.

51. Ensuring more equal access to resources, however, is not enough to achieve gender equality and unleash women's potential to eradicate poverty and hunger. Policies and programmes on agriculture and natural resources need to be gender-aware, and Governments are encouraged to enable women to make their voices heard in decision-making at all levels.

52. Tackling the multiple challenges of producing more food, in terms of quantity, diversity and quality, creating more remunerative work, reducing rural poverty, enhancing food security and nutrition and preserving the natural resource base should consider small family farmers, with a particular focus on women, as key targets in agriculture policies. Yet in many cases agriculture policies do not

[18] FAO, *State of the World's Forests 2016: Forests and agriculture — land-use challenges and opportunities* (Rome, 2016).

differentiate between different types of farmers and, by focusing on production targets, tend to favour larger holdings.

53. Available evidence is limited, and urgent, scaled-up actions are required to characterize small and medium producers. More work is also needed to produce comprehensive data on small-scale food producers' agricultural productivity, livelihoods, market activities and use of natural resources, especially in the poorest areas. Disaggregation by gender should be a priority.

54. The Women's Empowerment in Agriculture Index, developed by Feed the Future,[19] analyses these linkages in an agricultural-specific context and multidimensional manner, focusing on men's and women's decision-making within a household.[20]

VI. Ensuring sustainable food production systems

55. With regard to target 2.4 of the Goals, sustainable food production systems must be at the heart of poverty eradication and the promotion of prosperity. Improving equity and fair access to land tenure is becoming increasingly important in the short and long term, from the local to the national level, to address population growth and increasing pressures on resources and to promote sustainable land-use systems and the efficient use of resources.

56. Growing demand for agricultural products, in particular, animal-sourced foods, is driving major changes in food systems worldwide, with multiple and diverse economic, social and environmental consequences.[21] The livestock sector accounts for around one third of gross world agricultural product. Unsustainable livestock practices are linked to environmental degradation; livestock farming and the feed crop sector are the largest users of land resources and are directly or indirectly responsible for 14.5 per cent of greenhouse gas emissions. Livestock systems can be very vulnerable to climate change and new environment-related emerging diseases; they represent a key area for action to improve resource efficiency, reduce greenhouse gas emissions and adapt to climate change. The Committee on World Food Security policy recommendations, entitled "Sustainable agricultural development for food security and nutrition: what roles for livestock?", provide valuable guidance.

57. Agroecology has proven to be an effective strategy in accommodating both the sociopolitical characteristics of food security and the need to restore ecosystem functions. Agroecology is based on applying ecological concepts and principles to optimize interactions among plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system. By building synergies, agroecology can support food production and food security and nutrition while restoring the ecosystem services and biodiversity that are essential for sustainable agriculture and can play an important role in building resilience and adaptation to climate change.[22]

58. The diversification of production practices — through agroecology, agroforestry, organic farming and integrated landscape management — will be

[19] See www.feedthefuture.gov.

[20] See www.ifpri.org/publication/womens-empowerment-agriculture-index.

[21] Committee on World Food Security High-level Panel of Experts on Food Security and Nutrition, "Sustainable agricultural development for food security and nutrition: what roles for livestock?", July 2016.

[22] FAO, Agroecology knowledge hub. Available from www.fao.org/agroecology/en/ (accessed 16 July 2017).

necessary to sustainably increase productivity, as well as to build resilience to climate change, land and water degradation and pest and disease risks.

59. Strategic investments are promoting the wide adoption of sustainable natural resources and landscape management across the range of production systems and farming typologies. As a result of the Land Degradation Assessment in Drylands project, it is estimated that 33 per cent of land is degraded worldwide. The Land Degradation Neutrality Fund, launched in 2015 under the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, and other relevant funding mechanisms and development banks are supporting the transition to land degradation neutrality by scaling up and mainstreaming sustainable land management and land rehabilitation. This is essential to improve productivity, natural resource management, biodiversity, ecosystem services, resilience and food security.

60. Country capacities are being strengthened through the African Land Policy Initiative framework and guidelines on land policy in Africa. Programmes such as TerrAfrica and the Great Green Wall for the Sahara and the Sahel Initiative in sub-Saharan Africa demonstrate that knowledge management is critical for the documentation and sharing of successful technologies and approaches. TerrAfrica has been adopted as the preferred database of the secretariat of the Convention to Combat Desertification for reporting on best practices for soil and land management.

61. Global guidelines for the restoration of degraded forests and landscapes in drylands were used to develop action plans in Burkina Faso, the Niger, the Gambia, Ethiopia, Nigeria, Senegal, Fiji and Haiti. Over 3,000 hectares of agro-silvo-pastoral systems were restored across Burkina Faso and the Niger using FAO restoration models involving the use of multipurpose native species selected by communities and "Vallerani" water harvesting systems[23] dug by local communities.

62. In the 2015 report entitled *Status of the World's Soil Resources*, 10 main threats to healthy soils were identified (acidification, biodiversity loss, compaction, contamination, erosion, nutrient imbalance, salinization and alkalization, sealing, soil organic carbon loss and waterlogging), and recommendations were provided for reverting trends and addressing the challenges identified.[24]

63. The Global Soil Partnership and its regional soil partnerships are promoting sustainable soil management for food security and nutrition, climate change adaptation and mitigation, the provision of ecosystem services and sustainable development in many countries. The Partnership and the secretariat of the Convention to Combat Desertification both contribute to stronger land governance, which is fundamental to preventing and halting soil degradation and restoring soil functions and ecosystem services.

64. The Voluntary Guidelines for Sustainable Soil Management, developed through an inclusive process within the framework of the Global Soil Partnership, provide policy and technical solutions to address the 10 soil threats through sustainable soil management.[25]

65. FAO and the International Atomic Energy Agency are supporting countries in monitoring the effects of agriculture on soil and water resources by using modern technologies and developing sustainable and efficient land and water management

[23] See http://teca.fao.org/read/8757.

[24] FAO and Intergovernmental Technical Panel on Soils, *Status of the World's Soil Resources* (Rome, FAO, 2015).

[25] See www.fao.org/3/a-bl813e.pdf.

practices that contribute to increasing global agricultural production and food security while conserving natural resources, including reducing soil erosion and water losses and modernizing and optimizing irrigation and water use efficiency.

66. In the Paris Agreement, adopted in 2015, the fundamental priority of safeguarding food security and ending hunger and the particular vulnerabilities of food systems to the impacts of climate change are recognized. Awareness of the role of the agricultural sector in building resilience to climate change is growing. Around 90 per cent of nationally determined contributions now include agriculture; 78 per cent of such contributions are also related to achieving Sustainable Development Goal 2.[26] Eight countries (Kenya, Nepal, the Philippines, Thailand, Uganda, Uruguay, Viet Nam and Zambia) were supported in the implementation of nationally determined contributions through national adaptation plans, nationally appropriate mitigation actions and the monitoring, reporting and verification of greenhouse gas emissions in the agricultural sector.

67. The nationally determined contributions are a first step in a much broader process of rethinking agricultural and rural development under climate change. Meaningful mechanisms, such as national adaptation plans, have been established under the United Nations Framework Convention on Climate Change to underpin concerted actions to address climate change. In the report entitled *The State of Food and Agriculture 2016: Climate Change, Agriculture and Food Security*,[27] policy recommendations are provided and mechanisms are outlined that should be integrated into broader agricultural and food security and nutrition policies. FAO and the United Nations Development Programme have established a joint programme on supporting developing countries to integrate agricultural sectors into national adaptation plans.

68. The rapid growth of cities in developing countries poses many different challenges for future food systems in general, and for food systems for urban areas in particular. It is anticipated that in coming decades, under a business-as-usual scenario, the highest concentration of hunger and poverty will shift from rural to urban areas. Just over half of the current global population live in urban areas. Projections show that urbanization, combined with the overall growth of the world's population, could add another 2.5 billion people to urban populations by 2050. Close to 90 per cent of the increase is expected to be concentrated in Asia and Africa.

69. The role of cities and local governments is key to addressing urban food insecurity. The mainstreaming of food security and nutrition concerns has been seen in the New Urban Agenda, adopted by the United Nations Conference on Housing and Sustainable Urban Development (Habitat III); the follow-up to the Milan Urban Food Policy Pact, including a second mayors' summit held in Rome in October 2016; and awareness-raising on sustainable food systems for urban food security and nutrition. A rapid urban food systems assessment tool has been developed to support multi-stakeholder dialogues and examine rural-urban linkages in collaboration with the United Nations Human Settlements Programme (UN-Habitat).

70. The Sustainable Food Systems Programme of FAO and the United Nations Environment Programme is aimed at raising awareness, enabling conditions for the uptake of sustainable practices across food systems, increasing access to actionable information and tools to make food systems more sustainable and building synergies and cooperation to enhance and facilitate the shift to sustainable food systems. It

[26] Rita Strohmaier and others, "The agriculture sectors in the intended nationally determined contributions: analysis", Environment and Natural Resources Management Working Paper, No. 62 (Rome, FAO, 2016). Available from www.fao.org/3/a-i5687e.pdf.

[27] Available from www.fao.org/3/a-i6030e.pdf.

was developed through an inclusive multi-stakeholder process and currently includes more than 70 partners worldwide from different sectors.[28]

VII. Maintaining agricultural genetic diversity and promoting access to and sharing of benefits

71. With regard to target 2.5 of the Goals, increased attention is being paid to indigenous food systems in the context of climate change, climate adaptation and mitigation measures. As highlighted in *The future of food and agriculture: Trends and challenges*,[29] diversifying the food base with nutritionally rich foods is essential. Indigenous food systems can play a crucial role in diversification while providing ecosystem services and effective natural resource management that is beneficial for climate adaptation.

72. In 2016, FAO co-chaired the Inter-Agency Support Group on Indigenous Peoples' Issues, together with IFAD and the International Land Coalition, to identify convergences among the different actions undertaken by the member agencies in relation to the implementation of the system-wide action plan for ensuring a coherent approach to achieving the ends of the United Nations Declaration on the Rights of Indigenous Peoples and the Sustainable Development Goals. Indigenous peoples, local communities and small-scale farmers are able to improve many ecosystem services and preserve agricultural genetic diversity, thus contributing to a fundamental extent to the environmental sustainability of agricultural systems, by acting as the custodians of local ecologies and land capabilities.

73. In article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture, on farmers' rights,[30] the enormous contribution of small-scale farmers to the development and conservation of crop diversity is recognized and countries are encouraged to take measures to ensure the protection of their traditional knowledge, the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources, the right to participate in national decision-making on matters related to the conservation and sustainable use of plant genetic resources and the right to save, use, exchange and sell farm-saved seed.

74. The creation and dissemination of technologies specifically tailored to small producers and indigenous people take into account their ability to sustain productivity on lands that are often marginal through complex and innovative land management techniques that combine local and traditional knowledge, traditional products and modern technology. Adaptation processes tailored to local conditions and preferences should be reinforced and improved as key factors in securing the conservation of biodiversity, food security and improved nutrition.

75. In the report of the Secretary-General on progress towards the Sustainable Development Goals submitted to the Economic and Social Council (E/2017/66), it was indicated that in 2016, 4.7 million samples of seeds and other plant genetic material for food and agriculture had been preserved in 602 gene banks throughout 82 countries and 14 regional and international centres, a 2 per cent increase since 2014. Animal genetic material had been cryoconserved, but only for 15 per cent of national breed populations, according to information obtained from 128 countries. The stored genetic material was sufficient to reconstitute only 7 per cent of national breed populations should they become extinct. As of February 2017, 20 per cent of local breeds were classified as at risk.

[28] See www.unep.org/10yfp/programmes/sustainable-food-systems-programme.
[29] See www.fao.org/3/a-i6583e.pdf.
[30] See www.fao.org/3/a-i0510e.pdf.

76. The FAO global partnership initiative on the conservation and adaptive management of Globally Important Agricultural Heritage Systems, launched in 2002 at the World Summit on Sustainable Development, held in Johannesburg, South Africa, has contributed to the adoption of policies that integrate agricultural heritage into agricultural development programmes, and promotes the sustainable use of biodiversity and genetic resources for food and agriculture, as well as the protection of traditional knowledge systems and culture. A total of 37 sites in 16 countries have been designated as Globally Important Agricultural Heritage Systems.[31] Training and capacity development have been provided to users in all regions, and international seminars have been organized to discuss and strengthen the Systems.

VIII. Means of implementation

A. Investment

77. With regard to means of implementation target 2.a of the Sustainable Development Goals, evidence shows that investment in agriculture is more effective in reducing poverty than investment in non-agricultural sectors.[32] It is also up to 3.2 times better at reducing poverty in low-income and resource-rich countries.[33] Accelerated growth in the agricultural and rural economies is essential for breaking the vicious cycle of extreme poverty, undernourishment and malnutrition. Economic development and public investment in agriculture are highly correlated.

78. However, in the past 30 years, private and public investments in agriculture and rural areas have remained stagnant or have declined in most developing countries, particularly in sub-Saharan Africa and South Asia, where poverty and hunger are most prevalent. In countries where agricultural capital per worker and public investments in agriculture have stagnated, many are experiencing extreme poverty and hunger. The global agriculture orientation index, defined as agriculture's share of government expenditure divided by the sector's share of gross domestic product, fell from 0.38 in 2001 to 0.24 in 2013 and to 0.21 in 2015.

79. The share of sector-allocable aid allocated to agriculture from member countries of the Development Assistance Committee of the Organization for Economic Cooperation and Development (OECD) fell from nearly 20 per cent in the mid-1980s to 7 per cent in the late 1990s, where it remained through 2015. The decline reflects a shift away from aid for financing infrastructure and production towards a greater focus on social sectors (see E/2017/66).

80. The widening gap between the contribution of agriculture to the economy and its share of government expenditures cannot be offset by increasing official development assistance. Although total official flows (official development assistance plus other official flows) to the agriculture sector has substantially increased in both relative and absolute terms between 2006 and 2015, the increase, of $5 billion, cannot offset the decline in national expenditure on agriculture.

81. The international financial institutions, notably global and regional development banks, remain an important source of financing in food and agriculture. In 2014, the top three lenders to the public sector in food and

[31] See www.fao.org/giahs/en/.

[32] Mark Rosegrant and Peter Hazell, *Transforming the Rural Asian Economy: The Unfinished Revolution* (Oxford, Oxford University Press, 2001).

[33] Luc Christiaensen, Lionel Demery and Jesper Kuhl, "The (evolving) role of agriculture in poverty reduction: an empirical perspective", United Nations University-World Institute for Development Economics Research working paper No. 2010/36 (Helsinki, 2010).

agriculture were the World Bank (over $3 billion); the Asian Development Bank (around $1.26 billion); and IFAD ($713 million). The International Finance Corporation and the European Bank for Reconstruction and Development are the largest lenders to the private sector; they allocate over $1.3 billion for food and almost $1 billion for agriculture. There are expectations that agricultural lending by the international financial institutions will continue to rise. For instance, the African Development Bank plans to triple its agricultural investment from $700 million to $2.4 billion a year for the next 10 years, starting in 2017.

82. Solutions exist for the progressive development of more sustainable and productive agriculture. Support for smallholder farmers through outreach, technology transfer, infrastructure to build capacities and access to innovative financing are crucial. Research and innovation provide technical ingredients for change and a better understanding of ecosystem functions and services. Technologies and approaches exist for improving soil health and enhancing carbon sequestration, more efficient use of water and energy, efficient food supply chains, the reduction of food loss and waste and the conservation of biodiversity.

83. Across Africa, Asia and Latin America, the Consortium of International Agricultural Research Centers and its partners have improved food security and nutrition and increased community resilience to a changing environment, including through crop breeding and gene banks, biofortified crops, pest and disease control and climate-smart agriculture.[34] Information can be accessed easily by mobile phone, improving farmers' decision-making and management of climate risk.

84. The operationalization of the Technology Bank for the Least Developed Countries is helping the least developed countries to strengthen their science, technology and innovation capacities and fostering the development of national and regional innovation ecosystems that can attract outside technology and generate home-grown research, then take advancements to market.

85. The launch of the Technology Facilitation Mechanism to support the implementation of the Sustainable Development Goals facilitates multi-stakeholder collaboration and partnerships through the sharing of information, experiences, best practices and policy advice among Member States, civil society, the private sector, the scientific community, United Nations entities and other stakeholders. Such initiatives and efforts can catalyse the transformation of agriculture.

86. States have a key role in enabling, supporting and complementing investments by smallholders, empowering them to invest responsibly, and in promoting an enabling policy, legal, regulatory and institutional environment for better and more responsible investment in agriculture and food systems.

87. FAO has developed a comprehensive umbrella programme to support countries, private companies and small-scale producers in enhancing responsible investment in agriculture and food systems. It promotes the application of the Principles for Responsible Investment in Agriculture and Food Systems of the Committee on World Food Security and is interlinked with the implementation of other guidance instruments, such as the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security and the recently developed OECD-FAO Guidance for Responsible Agricultural Supply Chains.

88. For investments to effectively promote agriculture, rural development and inclusive growth, countries must also invest in rural non-farm economies, strengthen rural institutions and organizations, expand the coverage of social

[34] See www.cgiar.org/.

protection and public services to the rural poor and consider natural resource conservation and sustainable agricultural production, including by investing in climate-smart technologies.

B. Trade

89. With regard to means of implementation target 2.b of the Goals, some progress has been made in preventing distortions in world agricultural markets. The global agricultural export subsidies were reduced by 94 per cent from 2000 to 2014. In December 2015, members of the World Trade Organization adopted a ministerial decision on eliminating export subsidies for agricultural products and restraining export measures that have a similar effect (see E/2017/66). Specifically, they committed to advance the negotiations under the Doha Development Round, including the three pillars of agricultural reforms: domestic support, market access and export competition. They also committed to ensure that freer trade is supportive of development and reaffirmed the provisions for special and differential treatment for developing countries, prioritizing the concerns and interests of the least developed countries.

90. Both the Sustainable Development Goals and the mandate of the Doha Development Round have spurred policy reform for fisheries. In mid-2016, the importance of phasing out harmful fisheries subsidies, improving transparency and according special treatment to developing countries was stressed in a joint statement by FAO, the United Nations Conference on Trade and Development and the United Nations Environment Programme, which was co-signed by approximately 100 countries. A positive outcome of the Eleventh Ministerial Conference of the World Trade Organization, consistent with the 2020 deadline for phasing out certain forms of fisheries subsidies in target 14.6 of the Goals, will enlarge the rules-based system to the fisheries sector, helping to minimize the detrimental effects of overfishing and overcapacity at the multilateral level.

91. To make progress with global agricultural negotiations, which have faced multiple setbacks, requires balancing the benefits of lower trade barriers and the need to maintain the domestic policy space for agricultural development and food security. Developing countries are encouraged to formulate trade policies as part of a broader package of economic and social policies, prioritizing their long-term development objectives.

C. Price volatility and food commodity markets

92. With regard to means of implementation target 2.c of the Goals, in 2016, 21 countries experienced high or moderately high domestic prices relative to their historic levels for one or more staple cereal food commodities. Thirteen of those countries were in sub-Saharan Africa. The main causes of high prices were declines in domestic output, currency depreciation and insecurity. Localized increases in fuel prices also drove food prices higher.

93. The FAO Global Information and Early Warning System food price monitoring and analysis tool[35] contains up-to-date information and analysis on domestic prices of basic foods, mainly in developing countries, complementing FAO analysis on international markets. It provides early warning on high food prices at the country level that may negatively affect food security. In Central America, the System is facilitating the creation of an integrated regional market information system that

[35] Available from www.fao.org/giews/food-prices/home/en/.

will establish an online integrated and harmonized regional database of price, trade and production data. The project will also support the establishment of a regular reporting system.

94. In Rwanda and Senegal, the food price monitoring and analysis tool is being implemented with a view to it becoming the basis for establishing mobile data services — either through a smartphone application or text messaging — to deliver timely market information to smallholder farmers. The tool will become a key resource for analysts, decision makers and participants along the value chain, even those with limited or no access to the Internet.

IX. Conclusions and recommendations

95. Ending poverty, hunger and malnutrition is feasible and affordable and makes good business sense. Explicit political commitments with follow-up action and financing are needed to make ending hunger and poverty an international priority.

96. The ability to eradicate hunger and malnutrition and sustainably feed a growing population by 2030 depends on dedicated investments in agriculture, social protection, disaster risk reduction, education, health, aquatic ecosystem restoration, including fisheries, and efforts to develop the capacities of farmers, fishers, herders and forest-dependent communities to produce food and manage the natural environment.

97. Governments need to proactively adopt measures to reach those who are currently excluded from social protection systems, especially by extending social protection coverage to rural areas.

98. An integrated approach to tackling hunger and poverty also requires the joining of forces in social and developmental policymaking and programming. Complementing social protection effects, agricultural interventions must increase the production and productivity of smallholders and family farms by addressing structural constraints that limit access to land and water resources, inputs and financial, advisory and extension services, as well as markets.

99. Governments are encouraged to forge links and promote greater policy coherence and synergies among social protection programmes, food security, agricultural development, natural resources management, including of fisheries and forests, and rural poverty reduction.

100. Coherent policies, strong and accountable institutions and responsible investments are needed for sustainable food systems and natural resource management in the context of inclusive rural transformation and sustainable urbanization. They need to respect legitimate tenure rights and revitalize the agricultural sector while prioritizing women's empowerment and gender equality.

101. Reforms aimed at eliminating gender discrimination and promoting equal access to productive resources can help to ensure that women are equally prepared to cope with challenges and take advantage of the opportunities arising from changes shaping the rural economy.[36]

102. The importance of soil, land and natural resources in achieving the Sustainable Development Goals cannot be understated. Initiatives for the sustainable management of natural resources are having an impact in many countries.

[36] FAO, *The State of Food and Agriculture 2010-11: Women in agriculture — closing the gender gap for development* (Rome, 2011).

103. Strengthened and coordinated action is needed to promote the sustainable management of soil and land resources worldwide and at all levels for food security and resilient ecosystems and livelihoods, through an inclusive process enhancing access to land resources for marginalized groups and building on traditional knowledge systems and current scientific knowledge.

104. Achieving the Sustainable Development Goals will require a significant increase in the quantity and quality of investment in agriculture and rural areas, particularly in the most vulnerable countries, including those in protracted crises. Farmers are the largest investors in agriculture in developing countries and must be central to any strategy for increasing investment in the sector. They need a supportive policy environment based on economic incentives and ancillary public and private investments in infrastructure, market development and essential services. Support is urgently needed in areas in which climate change impacts, conflict and other adversities intersect and pose the greatest challenges to sustainable development.

105. Private investment alone cannot break entrenched cycles of rural poverty; additional public sector investments are needed to address market failures, encourage the development of the productive capacities of agricultural and rural households and improve rural infrastructure, transport, health and education.